

## CHAPTER 227. EVALUATE APPLICANT'S REFUELING PROCEDURES AND FACILITIES

### SECTION 1. BACKGROUND

#### 1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

*A. Maintenance:* 3356

*B. Avionics:* 5356

**3. OBJECTIVE.** This chapter provides guidance for evaluating an applicant's refueling procedures and facilities.

#### 5. GENERAL.

*A.* An applicant must have procedures for handling and dispensing aircraft fuels (ref. Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.135(b)(18); part 125, § 125.73(j); and part 135, § 135.23(j)). The following must be included as components of the applicant's manual:

- Dispensing equipment procedures
- Electrostatic protection procedures
- Contamination protection procedures
- Related recordkeeping procedures

*B.* The applicant's manuals must include procedures for vendors and contractors. Title 14 CFR does not establish standards for fueling facilities, but this does not relieve the applicant of overall responsibility for conducting those operations within established industry standards.

#### 7. FUELS.

*A. Aviation Gasoline (AVGAS).* The naming system for the grades of aviation gasoline is derived from the general term "AVGAS" followed by the grade marking. The grades are identified by their performance numbers, as recognized by all military and commercial specifications, e.g., 80, 100LL, and 100.

(1) The naming system for AVGAS grades is printed on all containers in white letters and numbers on a red background.

(2) Storage containers are also marked with a circular band around the piping, the color of which matches the dye in the AVGAS flowing through the line. The dyes are red for AVGAS 80, blue for AVGAS 100LL, and green for AVGAS 100. A minimum 4-inch wide band is recommended. If the pipeline is painted the color of the AVGAS, then no banding is needed.

*B. Jet Fuels.* The classifications of aviation turbine fuels are universally referred to as "jet fuels."

(1) The naming system for the jet fuel is printed on all containers in white letters on a black background to distinguish it from aviation gasoline.

(2) Examples of jet fuel storage container markings include the following:

(a) Jet A fuel containers are marked with a single 4-inch wide (minimum) black band around the piping.

(b) Jet A-1 fuel containers are marked with two 4-inch wide (minimum) black bands.

(c) Jet B-1 fuel containers are marked with three 4-inch wide (minimum) yellow bands.

**9. GEOGRAPHIC CONSIDERATIONS.** Inspections of contract fueling facilities by the office having the geographic responsibility must be coordinated with the certificate-holding district office (CHDO).

**11. REVIEWING THE MANUAL.** Maintenance aviation safety inspectors (ASI) must determine whether the applicant's manual contains appropriate instructions for storage and dispensing of aviation fuels. The instructions must be in accordance with current industry standards, such as Air Transportation Association (ATA) Spec 103: Standards for Jet Fuel Quality Control at Airports.

**13. INSPECTING THE FACILITIES.** The Maintenance ASIs are responsible for ensuring that the applicant's facilities comply with the manual procedures and established industry standards. For

contracted services, it is still the applicant's responsibility to ensure adherence to its manual procedures and standards.

## SECTION 2. PROCEDURES

### 1. PREREQUISITES AND COORDINATION REQUIREMENTS.

#### A. Prerequisites:

- Knowledge of the regulatory requirements of 14 CFR parts 121, 125, and 135, as applicable
- Successful completion of the Airworthiness Inspector Indoctrination course(s) or equivalent

*B. Coordination.* This task requires coordination with the applicant.

### 3. REFERENCES, FORMS, AND JOB AIDS.

#### A. References (current editions):

- Title 49 of the Code of Federal Regulations (49 CFR) part 173
- Advisory Circular (AC) 20-125, Water in Aviation Fuels
- AC 150/5230-4, Aircraft Fuel Storage, Handling, and Dispensing on Airports
- National Fire Protection Association (NFPA) pamphlets 70 and 407
- ATA Spec 103
- Federal Aviation Administration (FAA) Order 8300.10, Airworthiness Inspector's Handbook, appropriate certification chapters
- ATOS Element: 1.3.16

*B. Forms.* None.

#### C. Job Aids:

- JTAs: 2.3.29, 3.3.56

### 5. PROCEDURES.

*A. Review the Applicant's Manual.* Ensure that the manual indicates whether services will be performed by the operator or contracted out.

(1) Review the applicant's manual to ensure that it defines the following:

- Lines of authority and responsibilities
- The applicant's training program
- The vendor's training program, if applicable

(2) Ensure that the manual contains procedures for the following:

- Inspection of incoming fuels
- Elimination of fuel contamination
- Use of dispensing equipment
- Refueling and defueling, by specific make and model of aircraft
- Protection from fire (including electrostatic protection)
- Supervising and protecting passengers during refueling

(3) Ensure that the manual includes procedures for record retention and ongoing inspections of the following:

- Fuel (millipore checks, etc.)
- Storage facilities and dispensing equipment
- Filters
- Safety equipment
- Training programs for servicing personnel
- Individual training records
- Vendors (in accordance with applicant's program)

(4) If the manual is acceptable at this point, continue on to the facilities inspection. If the manual is unacceptable, return it to the applicant for corrections and/or revisions.

#### B. Inspect the Facility.

(1) Ensure that:

(a) Personnel training requirements are documented and current;

(b) Training is conducted according to the manual curriculum;

(c) Piping is marked and color-coded to identify fuel type and grade; and

(d) Control/cutoff valves are clearly marked with instructions for emergency use, e.g., on/off.

(2) Ensure that the fuel farm/storage area provides for the following:

- Proper security (fenced and posted)

- Proper display of “Flammable” and “No-Smoking” signs
- Markings to identify type/grade of fuel

(3) Ensure that the equipment includes the following:

- A positive low point sump
- Adequate fire extinguishers

(4) Ensure that fuel filters/filter separators contain, at a minimum, the following:

- An inlet strainer
- Inflow and outflow filter/separators sized to match maximum pump flow capacity
- Differential pressure check system
- Positive water defense system
- Sump drain with outlet located to facilitate capture of outflow
- Fuel sampling (millipore or equivalent) fittings downstream of all filters and filter/separators

(5) Ensure that hoses, nozzles, and outflow connectors are:

(a) Specifically designed and tested for delivery of aviation fuels;

(b) Controlled by spring-loaded, non-bypassable automatic (deadman) fuel flow cutoff valves;

(c) Equipped with dust cap or other feature that will minimize contaminant introduction into fuel system;

(d) Equipped with non-bypassable 100 mesh nozzle/connector screens; and

(e) Color-coded to identify fuel type.

(6) Ensure that electrical equipment, switches, and wiring are of a type or design approved for use in hazardous locations (explosion proof, e.g., free of

exposed conductors, contacts, switches, connectors, motors, etc.).

(7) Verify that grounding and bonding equipment ensures that piping, filters, tanks, and electrical components are electrically bonded together and interconnected to an adequate electrical ground. The system should have ground wires, bonding wires, and clamps adequate to facilitate prompt, definite electrical ground connection between the fueler/pit/cabinet, grounding system, and aircraft being fueled.

(8) Ensure that fuel tenders and fueling pits have the following:

(a) Appropriate markings displayed (e.g., “DANGER,” “FLAMMABLE,” “NO SMOKING,” fuel grade, standard hazardous material placard, filter due dates, and emergency fuel shutoff);

(b) Appropriately placed fire extinguishers; and

(c) Air filter/spark arrestor and a leak-free exhaust system terminating in a standard baffled original equipment type muffler, if equipped with internal combustion engine.

*C. Debrief Applicant.* If any deficiencies are noted, discuss possible corrective actions.

## 7. TASK OUTCOMES.

*A. File PTRS Data Sheet.*

*B. Certification Task.* Successful completion of this task will result in continuation of the certification task in accordance with the appropriate certification process.

*C. Document the Task.* File all supporting paperwork in the applicant’s office file.

**9. FUTURE ACTIVITIES.** Transfer from certification process to normal surveillance activities.